Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Currently Amended) The spot-size transformer in accordance with claim ~~1~~3, wherein each of the first optical waveguide and the second optical waveguide is channel-type.

3. (Currently Amended) ~~The spot-size transformer in accordance with claim 2~~A spot-size transformer, comprising:

a first optical waveguide having a first core and a first cladding covering substantially a whole surface of the first core, the first core having a surface region and an axis and the first cladding having an axis;

a second optical waveguide having a second cladding and a second core, the second core being an extension of the first cladding, wherein ~~the~~ a center of the first core and ~~the~~ a center of the second core are positioned substantially on a common axis; and

a transition region between the first and second optical waveguides, the transition region having an extension of the first core whose width becomes gradually narrower as it extends toward the second optical waveguide.

4. (Original) The spot-size transformer in accordance with claim 3, wherein the first cladding has at least a lower cladding positioned under the first core and an upper cladding positioned above the first core.

5. (Currently Amended) The spot-size transformer in accordance with claim 4, wherein ~~the~~ a bottom of the first core is in contact with the lower cladding and ~~the~~ a top surface and ~~the~~ both sides of the first core are in contact with the upper cladding.

6. (Currently Amended) The spot-size transformer in accordance with claim 5, wherein ~~the~~ an end face of the second core is substantially rectangular.

7. (Currently Amended) The spot-size transformer in accordance with claim ~~1~~3, wherein ~~the~~ a section with the first cladding and ~~the~~ a part constituting the second core that is an extension thereof substantially perpendicular to the axis of the first core are rectangular.

8. (Currently Amended) The spot-size transformer in accordance with claim 2, wherein ~~the~~ a section with the first cladding and ~~the~~ a part constituting the second core that is an extension thereof substantially perpendicular to the axis of the first core are rectangular.

9. (Currently Amended) The spot-size transformer in accordance with claim 3, wherein ~~the~~ a section with the first cladding and ~~the~~ a part constituting the second core that is an extension thereof substantially perpendicular to the axis of the first core are rectangular.

10. (Currently Amended) The spot-size transformer in accordance with claim 4, wherein ~~the~~ a section with the first cladding and ~~the~~ a part constituting the second core that is an extension thereof substantially perpendicular to the axis of the first core are rectangular.

11. (Currently Amended) The spot-size transformer in accordance with claim 5, wherein ~~the~~ a section with the first cladding and ~~the~~ a part constituting the second core that is an extension thereof substantially perpendicular to the axis of the first core are rectangular.

12. (Currently Amended) The spot-size transformer in accordance with claim 6, wherein ~~the~~ a section with the first cladding and ~~the~~ a part constituting the second core that is an extension thereof substantially perpendicular to the axis of the first core are rectangular.

13. (Previously Presented) The spot-size transformer in accordance with claim 12, wherein the first core has a shape obtained by omitting the extension of the first core whose width becomes gradually narrower.

14. (Original) The spot-size transformer in accordance with claim 13, wherein the second cladding is formed of a ladder silicone.

15. (Original) The spot-size transformer in accordance with claim 13, wherein the second cladding is formed of a silica glass.

16. (Original) The spot-size transformer in accordance with claim 15, wherein the second cladding is formed using a thin film process selected from a group consisting of a CVD process, a sputtering process, a vacuum deposition process, a FHD process and a sol-gel process.

17. (Currently Amended) A spot-size transformer, comprising:

a first optical waveguide having a first core and a first cladding covering the first core;

a second optical waveguide having a second core and a second cladding covering the second core, wherein a center of the first core and a center of the second core are positioned substantially on a common axis; and

a transition waveguide which is positioned between the first and the second optical ~~waveguide~~waveguides;

wherein a light propagated into the first optical waveguide has a first optical field distribution;

wherein a light propagated into the second optical waveguide has a second optical field distribution;

wherein the transition waveguide changes from the first optical field to the second optical field gradually or changes from the second optical field to the first optical field gradually; and

wherein the second core covers the first core at least in ~~the~~ a part corresponding to the transition waveguide and includes ~~the~~ a region where a refractive index is changed by irradiating energy beam.

18. (Currently Amended) The spot-size transformer in accordance with claim 17, wherein ~~the~~ a width of the part of the first core that corresponds to the transition waveguide becomes gradually narrower as it goes toward the second optical waveguide.

19. (Currently Amended) The spot-size transformer in accordance with claim 18, wherein ~~the~~ a part of at least the first cladding is provided as an extension of the second core.

20. (Currently Amended) The spot-size transformer in accordance with claim 19, wherein the second cladding has a first part which comprises substantially non-doped silica glass and a second part which comprises silica glass containing at least germanium (Ge).

21. (Currently Amended) The spot-size transformer in accordance with claim 20, wherein the second part further contains a first element which reduces refractive index.

22. (Currently Amended) The spot-size transformer in accordance with claim 21, wherein ~~the~~ refractive indexes of the first part and the second part are substantially equal.

23. (Currently Amended) The spot-size transformer in accordance with claim 22, wherein the first core comprises a material in which at least germanium (Ge), a first element and a second element which raise its refractive index are contained in ~~the~~ silica glass.

24. (Currently Amended) The spot-size transformer in accordance with claim 23, wherein the first element is boron (B) and the second element is phosphorus (P).

25. (Currently Amended) The spot-size transformer in accordance with claim 24, wherein the first optical waveguide and the second optical waveguide are channel-type~~ and the center of the first core and the second core are located approximately on the same axis~~.

26. (Withdrawn) A waveguide-embedded optical circuit comprising:

each of the first spot-size transformer and the second spot-size transformer including at least a first optical waveguide having a first core and a first cladding, a second optical waveguide having a second core which is provided as the extension of the first cladding and a second cladding;

the second optical waveguide of the first spot-size transformer and the second optical waveguide of the second spot-size transformer, which face each other through a groove.

27. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 26, wherein further comprising an optical functional element which is inserted in the groove.

28. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 27, wherein each of the first spot-size transformer and the second spot-size transformer comprises a transition waveguide which is positioned between the first and the second optical waveguide, the transition waveguide having the first core whose width of the part becomes gradually narrower as it goes toward the second optical waveguide.

29. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 28, wherein the first cladding covers substantially the whole surface of the first core.

30. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 28, wherein the center of the first core and the center of the second core are positioned substantially on the same axis.

31. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 30, wherein the second cladding is formed of a ladder silicone.

32. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 30, wherein the second cladding is formed of a silica glass.

33. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 32, wherein the second cladding is formed using a thin film process selected from a group consisting of a CVD process, a sputtering process, a vacuum deposition process, a FHD process and a sol-gel process.

34. (Withdrawn) A waveguide-embedded optical circuit comprising a pair of the spot-size transformer in accordance with the claim 25, the second optical waveguide of one spot-size transformer and the second optical waveguide of other spot-size transformer, which face each other through a groove.

35. (Withdrawn) The waveguide-embedded optical circuit in accordance with claim 26, wherein further comprising an optical functional element which is inserted in the groove.

36.-38. (Canceled)

39. (Currently Amended) A spot-size transformer, comprising:

a first optical waveguide having a first core and a first cladding covering the first core;

a second optical waveguide having a second core and a second cladding covering the second core, a part of at least the first cladding is provided as an extension of the second core, wherein a center of the first core and a center of the second core are positioned substantially on a common axis; and

a transition waveguide which is positioned between the first and the second optical ~~waveguide~~waveguides, the transition waveguide having an extension of the first core whose width becomes gradually narrower as it extends toward the second optical waveguide;

wherein a light propagated into the first waveguide has a first optical field distribution;

wherein a light propagated into the second waveguide has a second optical field distribution;

wherein the transition waveguide changes from the first optical field to the second optical field gradually or changes from the second optical field to the first optical field gradually; and

wherein the second core covers the first core at least in ~~the~~ a part corresponding to the transition waveguide and includes ~~the~~ a region where a refractive index is changed by irradiating energy beam.